Review of ETP C2 Delivery

U.S. AIR FORCE

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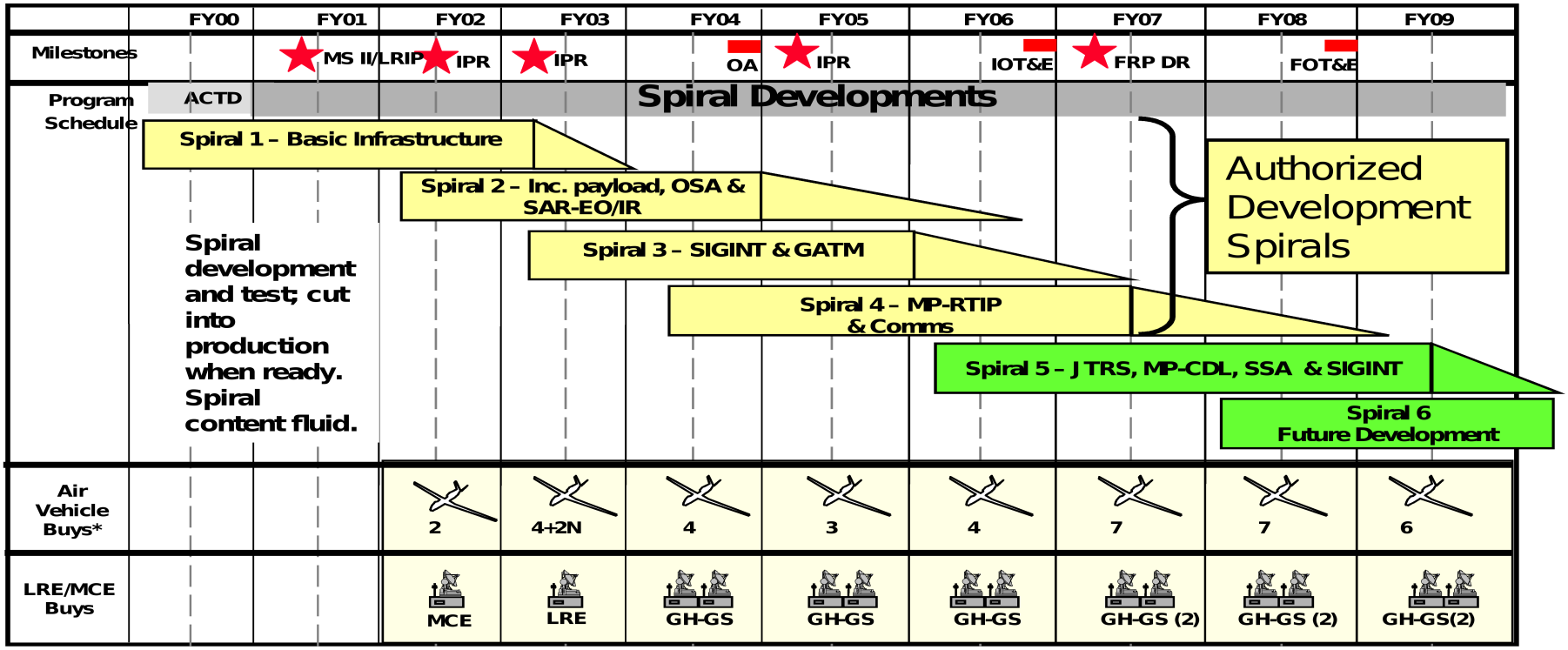
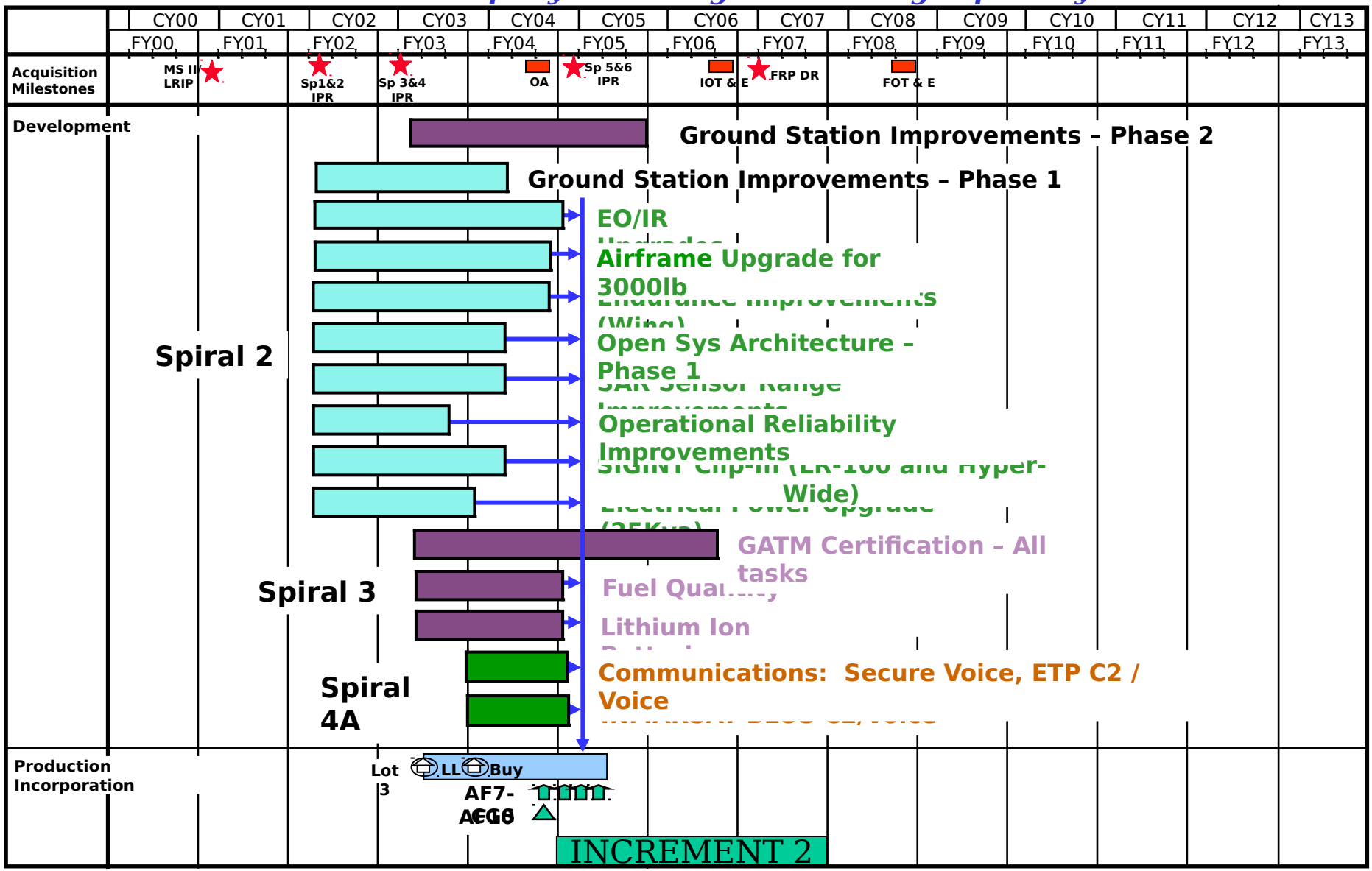
Baseline Program



* Buy profile from FY05 APOM

Lot 3 Content

Rapidly delivering war-winning capability



Lot 3 Content

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SPIRAL 2

- Airframe Upgrade to 3000 lb.
- Open Systems Architecture – Phase 1
  - New Sensor Management Unit (SMU)
  - Solid State Recorder Enhancements
- Ground Station Improvements – Phase 1
  - HCI Improvements
  - DAWS Functionality
  - Moving Map Package
- Operational Reliability Improvements
  - Rain Intrusion
  - Reliability & Safety analysis
- Endurance Improvements
  - Wing Redesign
  - Pressurized Fuel System
  - Dual Actuators
- Certification
  - GATM study
  - Airworthiness
- EO/IR Upgrades
- SAR Range Improvements
- SIGINT Clip-In (LR-100/Hyper-Wide)
- Electrical Power Upgrade (25 Kva)
- Engine Qualification

SPIRAL 3

- Ground Station Improvements – Phase 2
  - Backwards Compatibility
- Fuel Quantity Measurement
- Lithium Ion Batteries
- Software Separation
- GATM Certification – All tasks
- GPS Timer

SPIRAL 4

- INMARSAT BLOS C2/Voice
- Secure Voice
- ETP C2/Voice

Lot 4 Content

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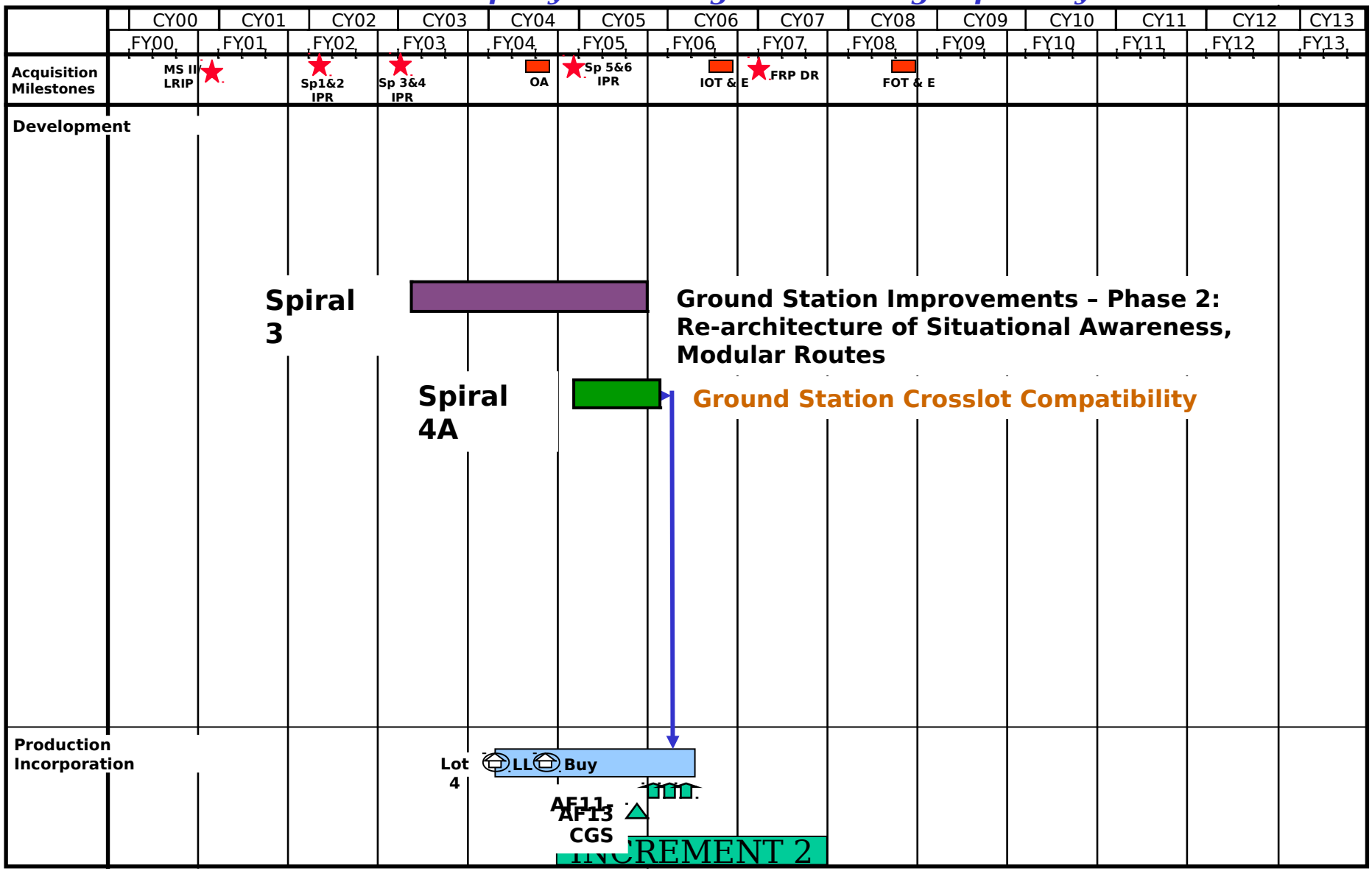

Lot 4 Content

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SPIRAL 3

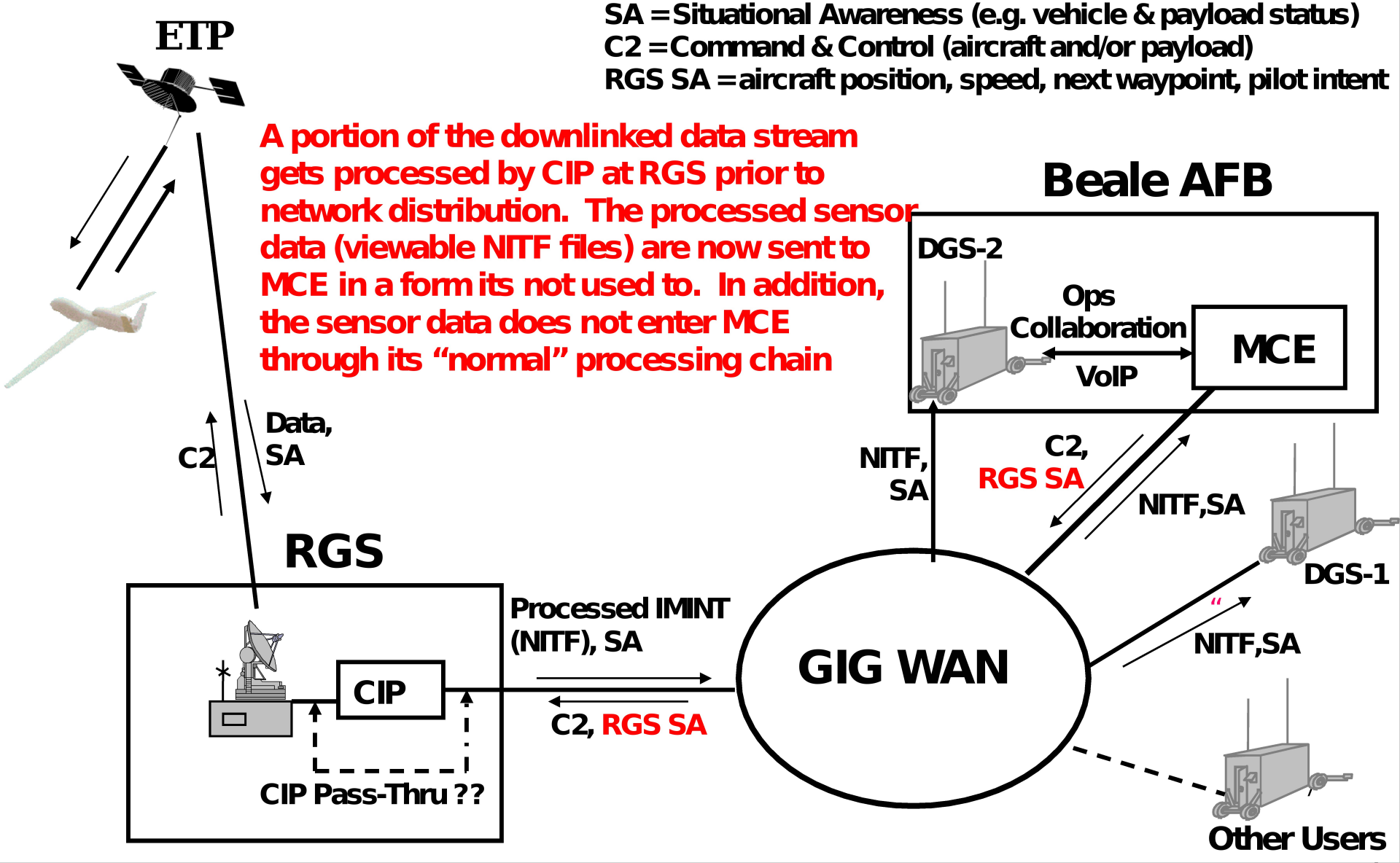
- Ground Station Improvements – Phase 2
  - Re-architecture of Situational Awareness Capability
  - Modular Routes
    - Dynamic Retasking
- LN-100 GPS DMS Replacement

SPIRAL 4A

- Ground Station Crosslot Compatibility

GH-ETP

Data = Raw Sensor Payload Data
SA = Situational Awareness (e.g. vehicle & payload status)
C2 = Command & Control (aircraft and/or payload)
RGS SA = aircraft position, speed, next waypoint, pilot intent


ETP
A portion of the downlinked data stream gets processed by CIP at RGS prior to network distribution. The processed sensor data (viewable NITF files) are now sent to MCE in a form its not used to. In addition, the sensor data does not enter MCE through its "normal" processing chain
Beale AFB
DGS-2
Ops Collaboration
VoIP
MCE
C2
Data, SA
NITF, SA
C2, RGS SA
NITF,SA
DGS-1
RGS
CIP
CIP Pass-Thru ??
Processed IMINT (NITF), SA
C2, RGS SA
GIG WAN
NITF,SA
Other Users

ETP Tasks in the TDD

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- **Modify the IMMC to add “next waypoint” parameter to 1553 data from the IMMC to CAMA**
- **Modify CAMA to include “next waypoint” parameter in NAV channel.**
- **Extend command link C2 channel from GCI to RGS terminal via secure data network (Bit rate 20 kb/s).**
- **Extend return link C2 from RGS to MCE-GCI via secure data network (Bit rate 50 kb/s).**
- **Extend command link voice channel from GCI to RGS terminal via secure data network (Bit rate 20 kb/s).**

Technical Description Document

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- **5.6.1.4**

"The Contractor shall modify the Global Hawk system as required to provide command and control of the UAV via terrestrial link to the RGS and via ETP link to the UAV."

"Command and Control (C2) shall include support to three simultaneous secure voice networks. The Contractor shall provide the capability to transmit digital messages terrestrially from the MCE to the RGS to provide the RGS with situational awareness relating to each of three UAVs controlled by the MCE. The messages shall contain such information as position, airspeed, next waypoint and other information as required to convey the intent of the GH pilot".

Lot 5 Content

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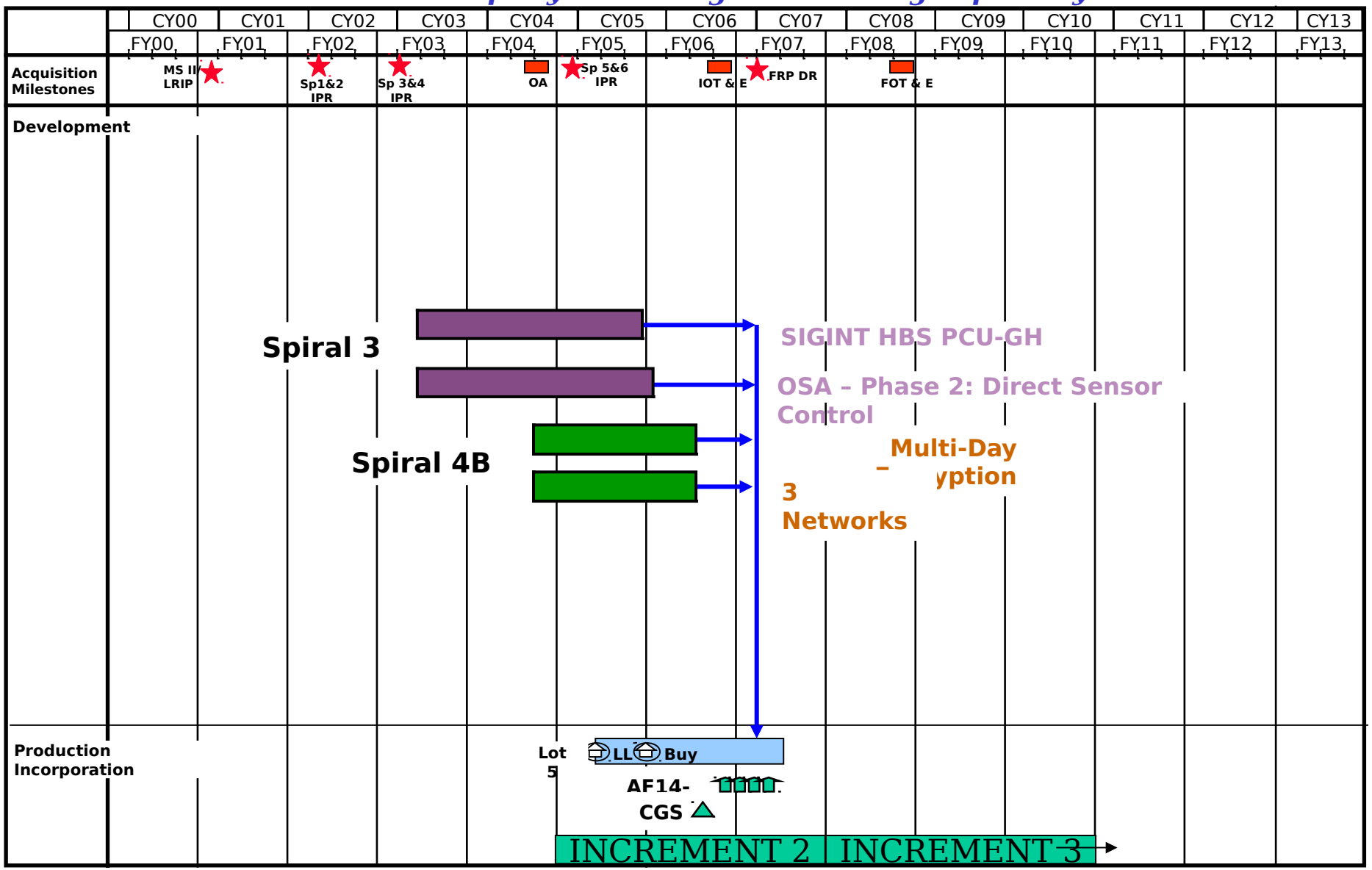

Lot 5 Content

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SPIRAL 3

- **SIGINT – High Band System (HBS) PCU**
- **OSA – Phase 2**
  - **Direct Sensor Control**
- **Multi-day Encryption**
- **3 Simultaneous LOS Secure Voice Radios**

Lot 7 & 8 Content

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